

A GUIDE TO MORTON'S NEUROMA

OVERVIEW

Morton's Neuroma is a term used to describe a benign enlargement of the third common digital branch of the medial plantar nerve located between the third and fourth metatarsal heads (Fig 1). Besides the third intermetatarsal space, a neuroma can develop in any area where a nerve becomes chronically irritated. A Morton's neuroma is commonly due to specific anatomical and biomechanical relationships between the third common digital nerve, the third and fourth metatarsal heads, and the other structures in the third intermetatarsal space. Acute nerve trauma may result from specific shoe gear such as a very tight shoe that compresses the nerve, or high heel shoes that cause stretching of the common digital nerve as it passes under the deep transverse intermetatarsal ligament. Chronic, more insidious irritation can occur when shearing forces between the medial and lateral columns of the foot irritate the nerve during the pronation phase of gait. Nerve trauma initially causes endoneural and epineural edema. Later changes involve perineural, epineural, and endoneural fibrosis and hypertrophy. Eventually axonal degeneration may occur.

SYMPTOMS

- One or more numb toes (usually the 3rd and 4th toes)
- Feeling that something is between the toes or under the ball of the foot.
- Sharp pain in the foot that radiates toward the toes or up the leg.
- Early stage symptoms may be intermittent; however, late stage symptoms are constant.
- Symptoms are almost always aggravated by shoes and frequently relieved by removing them and massaging the affected area.

DIAGNOSIS

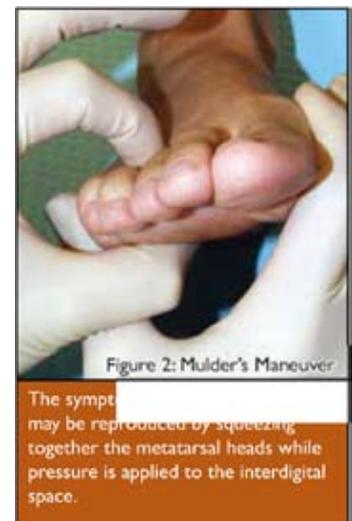
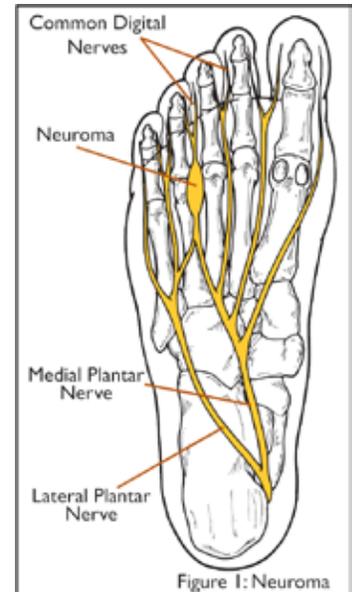
- Clinical history and biomechanical evaluation.
- Positive Mulder's sign (a palpable and some times painful click in the affected intermetatarsal space as the neuroma is squeezed plantarly between the adjacent metatarsal heads — Fig. 2).
- X-rays are always taken to rule-out other possible diagnoses.
- Ultrasound is used to visualize soft tissue structures.
- MRI and nerve conduction studies are rarely necessary.
- Other conditions with symptoms that resemble Morton's neuroma include: metatarsal stress fracture, MPJ capsulitis, osteochondritis dissecans, rheumatoid or gouty arthritis, diabetic peripheral neuropathy, ischemia, tarsal tunnel syndrome, nerve root compression, and neoplasm or intermetatarsal bursitis.

TREATMENT

Conservative treatment is usually effective if initiated before fibrosis and hypertrophy occur.

- Functional foot orthoses are used to improve alignment and function of the foot, as well as limit pronation.
- Steroid injections
- Sclerosing alcohol injections
- Surgical Treatment:

If nerve changes are mild the patient will often benefit from an endoscopic nerve release procedure, however as the changes progress to neutral fibrosis, hypertrophy, or axonal degeneration more invasive surgical intervention is necessary.



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Chicago Podiatric Surgeons is dedicated to providing the best possible podiatric care for your patients. This care includes answering patient questions and ensuring they understand their treatment options. Of course, the understanding of treatment options starts with you, the primary care physician. We hope that you find this overview of common podiatric disorders to be helpful in the care of your patients, and that you look forward to receiving future topics from us.